

REMARKS

This Amendment is submitted in response to the Official Letter, dated October 28, 2004. Claims 14 and 20 through 22 have been amended. Claims 1 through 10, 18 and 19 have been cancelled. New claims 25 and 26 have been added. The application now includes claims 11 through 17 and 20 through 26, with claims 14 and 22 being independent claims. Favorable reconsideration of the application, as amended, is respectfully requested.

In the Official Letter, the Examiner rejected claims 14 and 24 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,784,237 to Condne et al. in view of U.S. Patent No. 5,473,945 to Grieff et al. The Examiner stated that the Condne et al. reference discloses an inertial sensor element 20 mounted upon a base, and a plurality of signal conditioning circuits 36 and 40 connected to the sense element. The Examiner also stated that high and low frequency accelerations comprise different ranges and that the only difference between the claimed invention and the Condne et al. reference disclosure is mounting the sense element upon a silicon wafer. The Examiner further stated that the Grieff et al. reference teaches mounting an accelerometer on a silicon wafer in order to provide a micro-mechanical accelerometer. The Examiner then concluded that it would have been obvious to mount the sense element of the Condne et al. reference on the silicon wafer as taught by the Grieff et al. reference.

Applicant has amended independent claim 14 to recite a plurality of signal conditioning circuits connected to an inertial sensor element, with a first one of the signal conditioning circuits being calibrated to sense a first range of change in a specific body motion parameter. Applicant also has amended independent claim 14 to recite that a second one of the signal conditioning circuits is calibrated to sense a second range of change in the same specific body motion parameter.

The Condne et al. reference states, in column 2, lines 41 through 61, that:

If acceleration forces act upon the disk 20 of the apparatus 15 in the event of an accident, then the disk 20 is deflected out of its basic

position. Two cases, of a slow rotation and an accelerated rotation, must be distinguished from one another. In the case of a slow rotation of the disk 20 about the axis of the torsional bar 19, its weight, together with the torsional force which however counteracts it, leads to a change in the distance between the measuring face 22 and the distance sensor 23. This deflection now serves as a standard for *the angular position with respect to the horizontal, by means of which the position of the motor vehicle can be determined.*

If the apparatus 15 and in particular the disk 20 having the extension 21 is rotated in an accelerating fashion, then the mass inertia of the disk 20 and the mass of the extension 21 likewise produce a change in the distance between the measuring face 22 and the distance sensor 23. Via the distance measurement, a measurement signal *for the incident angular acceleration, and from it the rotational velocity of the motor vehicle, is attainable.* (Emphasis added.)

Based upon the above, applicant believes that the Condne et al. reference teaches sensing changes in two different body motion parameters, angular position of the vehicle and rotational velocity of the vehicle, not changes in the same specific body motion parameter, as recited in amended independent claim 14. Indeed, because the Condne et al. reference teaches sensing changes in different body motion parameters, applicant believes that the reference actually teaches away from the structure recited in amended claim 14. Therefore, combining the Condne et al. and Grieff et al. references will not produce the structure recited in amended claim 14. Accordingly, applicant believes that amended independent claim 14 is patentable over the cited references and respectfully requests that the Examiner withdraw his rejection of the claim.

Claim 24 is dependent upon amended independent claim 14 and includes the limitations recited therein. Accordingly, for the reasons given above, applicant also believes that claim 24 is patentable over the cited references and respectfully requests that the Examiner withdraw his rejection of the claim.

The Examiner also rejected claims 11 through 14, 23 and 24 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,386,040 to Broillet et al. in view of the Grieff et al reference. The Examiner stated that the Broillet et al. reference

discloses an inertial sensor comprising an acceleration sensor 31 mounted upon a body, which is subject to vibrations, and a plurality of signal conditioning circuits 33 and 34 connected to the accelerometer. The Examiner also stated that low frequency vibrations comprise a first range of change in a body motion parameter, and high frequency vibrations comprise a second range of change in a body motion parameter. The Examiner further stated that the Grieff et al. reference teaches mounting an accelerometer on a silicon wafer in order to provide a micro-mechanical accelerometer. The Examiner then concluded that it would have been obvious to mount the acceleration sensor of the Broillet et al. reference on the silicon wafer taught by the Grieff et al. reference.

Applicant also has amended independent claim 14 to recite a plurality of signal conditioning circuits that are operable to generate a plurality of electrical signals with each electrical signal being a function of a change in a specific body motion parameter while also being within the calibration range associated with the signal conditioning circuit.

The Broillet et al. reference states in column 3, lines 12 through 17, that:

The main advantage of the invention is that it allows to obtain, by means of a sole transducer and a sole measurement chain, *a single output signal* which, in the range of low frequencies, corresponds to the vibration velocity, and in the range of medium and high frequencies, to the vibration acceleration. (Emphasis added.)

Applicant believes that the Broillet et al. reference teaches generation of a single output signal, as described above and illustrated by the summing point 40 shown in Fig. 2 of the reference, not a plurality of signals, as recited in amended independent claim 14. Indeed, because the Broillet et al. reference teaches generating a single output signal, applicant believes that the reference actually teaches away from the structure recited in amended claim 14. Therefore, combining the Broillet et al. and Grieff et al. references will not produce the structure recited in amended claim 14. Accordingly, applicant believes that amended independent claim 14 is patentable over

the cited references and respectfully requests that the Examiner withdraw his rejection of the claim.

Claims 11 through 13, 23 and 24 are dependent upon amended independent claim 14 and include the limitations recited therein. Accordingly, for the reasons given above, applicant also believes that claims 11 through 13, 23 and 24 are patentable over the cited references and respectfully requests that the Examiner withdraw his rejection of the claims.

The Examiner further rejected claim 20 under 35 U.S.C. §103(a) as being unpatentable over the Broillet et al. reference in view of the Grieff et al reference as applied to claim 12 and further in view of U.S. Patent No. 5,905,203 to Flach et al. (Applicant notes that the Examiner cited a Flash reference, but believes this was a typographic error and has assumed that the Examiner intended to cite Flach, as stated above.) The Examiner stated that it is known in the art to form an application specific integrated circuit 14 on a silicon wafer 10 and, therefore, it would have been obvious to include the signal conditioning circuits integral within an application specific integrated circuit formed on a silicon wafer.

Claim 20 is dependent upon amended independent claim 14 and contains the limitations recited therein. Accordingly, for the reasons stated above, applicant believes that claim 20 also is patentable over the cited art and respectfully requests that the Examiner withdraw his rejection of the claim.

In the Official Letter, the Examiner also stated that claims 15 through 17, 21 and 22 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims. Accordingly, applicant has rewritten claim 22 in independent form to include all of the limitations of base claims 14. Claims 15 through 17 and 21 are dependent upon rewritten claim 22 and include the limitations recited therein. Therefore, applicant respectfully requests that the Examiner withdraw his objection to rewritten claim 22 and claims 15 through 17 and 21.

Applicant has added new claims 25 and 26 which are dependent upon claims 13 and 15, respectively. New claims 25 and 26 recite the same limitations that are recited in claims 12 and 16. Therefore claims 25 and 26 do not introduce any new matter. Furthermore, new claim 25 is dependent upon amended independent claim 14 while new claim 26 is dependent upon rewritten claim 22. Accordingly, for the reasons given above, applicant believes that new claims 25 and 26 are patentable over the art of record and respectfully requests that the Examiner allow the claims.

In view of the amendments and above remarks, it is believed that the application is now in condition for allowance.